

Docket No.: 13478-00002-US  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Andreas Renz et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: Concurrently Herewith

Art Unit: N/A

For: NOVEL PLANT ACYLTRANSFERASES  
SPECIFIC FOR LONG-CHAINED,  
MULTIPLY UNSATURATED FATTY  
ACIDS

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Examiner: Not Yet Assigned

**INFORMATION DISCLOSURE STATEMENT (IDS)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement accompanies the new patent application submitted herewith.

Applicant has not submitted copies of each cited U.S. patent and U.S. patent application as required by 37 CFR 1.98(a)(2)(i), amended October 2004, as the U.S. Patent and Trademark Office has waived this requirement for all U.S. patent applications. Applicant submits herewith copies of foreign and non-patents in accordance with 37 CFR 1.98(a)(2).

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The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 13478-00002-US.

Dated: September 30, 2005

Respectfully submitted,

By   
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Substitute for form 1449A/B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete If Known</b>	
		Application Number	Not Yet Assigned		
		Filing Date	Concurrently Herewith		
		First Named Inventor	Andreas Renz		
		Art Unit	N/A		
		Examiner Name	Not Yet Assigned		
		Attorney Docket Number	13478-00002-US		
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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA*	US-5,614,393	03-25-1997	Thomas et al.	
	AB*	US-5,968,791	10-19-1999	Davies et al.	
	AC*	US-6,043,411	03-28-2000	Nishizawa et al.	
	AD*	US-2004/0111763	06-10-2004	Heinz et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>2</sup> - Number <sup>3</sup> -Kind Code <sup>3</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	BA	WO-91/13972	09-19-1991	Calgene Inc.		
	BB	WO-93/06712	04-15-1993	Rhone-Poulenc Agrochimie		
	BC	WO-93/10241	05-27-1993	Calgene Inc.		
	BD	WO-93/11245	06-10-1993	E. I. duPont de Nemours And Company		
	BE	EP-0 550 162	07-07-1993	Pioneer Hi-Bred International, Inc.		
	BF	WO-94/11516	05-26-1994	E. I. duPont de Nemours And Company		
	BG	WO-94/13814	06-23-1994	Nickerson Biocem Limited		
	BH	WO-94/18337	08-18-1994	Monsanto Company & Michigan State University		
	BI	WO-95/18222	07-06-1995	Kirin Beer KK		See US 6,043,411
	BJ	WO-95/27791	10-19-1995	Calgene Inc.		
	BK	WO-96/21022	07-11-1996	Rhone-Poulenc Agrochimie		
	BL	WO-96/24674	08-15-1996	Gene Shears Pty. Limited		
	BM	WO-97/21340	06-19-1997	Cargill, Inc.		
	BN	WO-97/30582	08-28-1997	Carnegie Institution Of Washington & Monsanto Company		
	BO	EP-0 794 250	09-10-1997	Soremartec S.A. & Ferrero S.p.A.		
	BP	WO-98/27203	06-25-1998	Kosan Biosciences		
	BQ	WO-98/46764	10-22-1998	Calgene LLC & Abbott Laboratories		
	BR	WO-98/46776	10-22-1998	Calgene LLC		
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	BU	WO-98/54303	12-03-1998	Cell Therapeutics, Inc.		
	BV	WO-98/54302	12-03-1998	Icos Corporation		
	BW	WO-98/55625	12-10-1998	Calgene LLC		
	BX	WO-98/55632	12-10-1998	Calgene LLC		
	BY	WO-98/55631	12-10-1998	Calgene LLC		

Examiner Signature		Date Considered	
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JC12 Rec'd PCT/PTC 30 SEP 2005

PTO/SB/08a/b (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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	BZ	WO-99/27111	06-03-1999	University of Bristol		
	BA1	WO-99/64616	12-16-1999	Abbott Laboratories		
	BB1	WO-00/18889	04-06-2000	Calgene LLC		
	BC1	WO-00/21557	04-20-2000	Merck & Co., Inc.		
	BD1	WO-00/42195	07-20-2000	Calgene LLC		
	BE1	WO-01/59128	08-16-2001	BASF Aktiengesellschaft		See US 2004/0111763
	BF1	WO-02/072742	09-19-2002	Societe Des Produits Nestle S.A.		
	BG1	DE-102 19 203	11-13-2003	BASF Plant Science GmbH		See Abstract

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \* CITE NO.: Those application(s) which are marked with an single asterisk (\*) next to the Cite No. are not supplied (under 37 CFR 1.98(a)(2)(iii)) because that application was filed after June 30, 2003 or is available in the IFW. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
	CA	YAMASHITA, A. et al., "ATP-independent Fatty Acyl-Coenzyme A synthesis from Phospholipid", The Journal of Biological Chemistry 276(29) (2001), pp. 26745-26752.		
	CB	ZOU, J. et al., "The <i>Arabidopsis thaliana</i> TAG1 Mutant Has a Mutation in a Diacylglycerol Acyltransferase Gene", The Plant Journal 19(6) (1999), pp. 645-653.		
	CC	WANG, X. M. et al., "Biosynthesis and Regulation of Linolenic Acid in Higher Plants", Plant Physiol. Biochem., 26(6) 1988, pp. 777-792.		
	CD	ZANK, T. K. et al., "Cloning and Functional Expression of the First Plant Fatty Acid Elongase Specific For Δ6-Polyunsaturated Fatty Acids", Biochemical Society Transactions 28(6) (2000), pp. 654-658.		
	CE	TUMANAY, A. W. et al., "Synthesis of Azidophospholipids and Labeling of Lysophosphatidylcholine Acyltransferase from Developing Soybean Cotyledons", Biochimica et Biophysica Acta 1439 (1999), pp. 47-56.		
	CF	STYMNE, S. et al., "Evidence for the Reversibility of the Acyl-CoA: Lysophosphatidylcholine Acyltransferase in Microsomal Preparations from Developing Safflower ( <i>Carthamus tinctorius</i> L.) Cotyledons and Rat Liver", Biochem. J. 223 (1984), pp. 305-314.		
	CG	STUKEY, J. E. et al., "The <i>OLE1</i> Gene of <i>Saccharomyces cerevisiae</i> Encodes the Δ9 Fatty Acid Desaturase and Can Be Functionally Replaced by the Rat Stearoyl-CoA Desaturase Gene", The Journal of Biological Chemistry 265(33) (1990), pp. 20144-20149.		
	CH	CASES, S. et al., "Identification of a Gene Encoding an Acyl CoA: Diacylglycerol Acyltransferase, A Key Enzyme in Triacylglycerol Synthesis", Proc. Natl. Acad. Sci. USA 95 (1998), pp. 13018-13023.		
	CI	MISHRA, S. et al., "Purification and Characterization of Thiol-Reagent-Sensitive Glycerol-3-Phosphate Acyltransferase from the Membrane Fraction of an Oleaginous Fungus", Biochem. J. 355 (2001), pp. 315-322.		
	CJ	VAZHAPPILLY, R. et al., "Heterotrophic Production Potential of Omega-3 Polyunsaturated Fatty Acids by Microalgae and Algae-like Microorganisms", Botanica Marina 41 (1998), pp. 553-558.		
	CK	OELKERS, P. et al., "A Lecithin Cholesterol Acyltransferase-like Gene Mediates Diacylglycerol Esterification in Yeast", The Journal of Biological Chemistry, 275(21) (2000), pp. 15609-15612.		

Examiner Signature	Date Considered
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				First Named Inventor	Andreas Renz
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	3	of	3	Attorney Docket Number	13478-00002-US

CL	MCLEAN, J. et al., "Cloning and Expression of Human Lecithin-Cholesterol Acyltransferase cDNA", Proc. Natl. Acad. Sci. USA, 83 (1986), pp. 2335-2339.
CM	WADA, H. et al., "Enhancement of Chilling Tolerance of a Cyanobacterium by Genetic Manipulation of Fatty Acid Desaturation", Nature 347 (1990), pp. 200-203.
CN	STYMNE, S. et al., "Triacylglycerol Biosynthesis", Chapter 8 from The Biochemistry of Plants, A Comprehensive Treatise, Volume 9 (1987), Stump, P. K. Ed., Academic Press, NY, pp. 175-214.
CO	FRENTZEN, M., "Acyltransferases from Basic Science to Modified Seed Oils", Fett/Lipid 100(4-5) (1998), pp. 161-166.
CP	Database EMBL, "Vicia faba putative glycerol-3-phosphate acyltransferase (GPAT) mRNA", Database Accession No. AF090734, September 23, 1998.
CQ	HOBBS, D. H. et al., "Cloning of a cDNA Encoding Diacylglycerol Acyltransferase from <i>Arabidopsis thaliana</i> and Its Functional Expression", FEBS Letters 452 (1999), pp. 145-149.
CR	HUANG, Y-S. et al., "Cloning of $\Delta 12$ - and $\Delta 6$ -Desaturases from <i>Mortierella alpina</i> and Recombinant Production of $\gamma$ -Linolenic Acid in <i>Saccharomyces cerevisiae</i> ", Lipids 34(7) (1999), pp. 649-659.
CS	LANDS, W. E. M., "Metabolism of Glycerolipids", The Journal of Biological Chemistry, 235(8) (1960), pp. 2233-2237.
CT	METZ, J. G. et al., "Production of Polyunsaturated Fatty Acids by Polyketide Synthases in Both Prokaryotes and Eukaryotes", Science 293 (2001), pp. 290-293.
CU	JAKO, C. et al., "Seed-Specific Over-Expression of an Arabidopsis cDNA Encoding a Diacylglycerol Acyltransferase Enhances Seed oil Content and Seed Weight", Plant Physiology, 126 (2001), pp. 861-874.
CV	TOTANI, N. et al., "The Filamentous Fungus <i>Mortierella alpina</i> , High in Arachidonic Acid", Lipids 22(12) (1987), pp. 1060-1062.
CW	KNUTZON, D. S. et al., "Cloning of a Coconut Endosperm cDNA Encoding a 1-Acyl-sn-Glycerol-3-Phosphate Acyltransferase That Accepts Medium-Chain-Length Substrates", Plant Physiol. 109 (1995), pp. 999-1006.
CX	ALONSO, D. L. et al., "Plants as 'Chemical Factories' for the Production of Polyunsaturated Fatty Acids", Biotechnology Advances 18 (2000), pp. 481-497.
CY	LASSNER, M. W. et al., "Lysophosphatidic Acid Acyltransferase from Meadowfoam Mediates Insertion of Erucic Acid at the sn-2 Position of Triacylglycerol in Transgenic Rapeseed Oil", Plant Physiol 109 (1995), pp. 1389-1394.
CZ	AKIMOTO, M. et al., "Carbon Dioxide Fixation and Polyunsaturated Fatty Acid Production by the Red Alga <i>Porphyridium Cruentum</i> ", Applied Biochemistry and Biotechnology, 73 (1998), pp. 269-278.
CA1	SLABAS, A. R. et al., "Acyltransferases and Their Role in the Biosynthesis of Lipids- Opportunities for New Oils", J. Plant Physiol. 158 (2001), pp. 505-513.
CB1	ABBADI, A. et al., "Transgenic Oilseeds as Sustainable Source of Nutritionally Relevant C20 and C22 Polyunsaturated Fatty Acids?", Eur. J. Lipid Sci. Technol. 103 (2001), pp. 106-113.
CC1	AKERMOUN, M. et al., "Solubilization of the Plastidial Lysophosphatidylcholine Acyltransferase from <i>Allium porrum</i> Leaves: Towards Plants Devoid of Eukaryotic Plastid Lipids?", Biochemical Soc. Transactions 28 (2000), pp. 713-715.
CD1	FRASER, T., et al., "Partial purification and photoaffinity labeling of sunflower acyl-CoA: lysophosphatidylcholine acyltransferase", Biochemical Soc. Transactions 28 (2000), pp. 715-718.

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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